



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,101	10/23/2001	Stephen L. Buchwald	MTV-014.03	3983

25181 7590 02/17/2004

FOLEY HOAG, LLP  
PATENT GROUP, WORLD TRADE CENTER WEST  
155 SEAPORT BLVD  
BOSTON, MA 02110

EXAMINER

SACKEY, EBENEZER O

ART UNIT PAPER NUMBER

1626

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/004,101

Applicant(s)

BUCHWALD ET AL.

Examiner

EBENEZER SACKKEY

Art Unit

1626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-12,21-30,32-77 and 79 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-30,32-77 and 79 is/are allowed.
- 6) ☒ Claim(s) 9-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11/03.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### **Status of Claims**

Claims 9-12, 21-30, 32-77 and 79 are pending.

Claim 9 has been amended.

This is in response to applicant's amendment filed on 11/17/03.

The rejection of claim 9 under 35 U.S.C 102 (b) and (e) has been withdrawn.

### ***Information Disclosure Statement***

Receipt of the Information Disclosure Statement filed on 11/05/03 is acknowledged and has been entered into the file. A signed copy of the 1449 is attached herewith.

### ***Terminal Disclaimer***

The terminal disclaimer filed on 09/29/03 and 10/09/03 respectively disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of 6,307,087 and 6,395,916 respectively has been reviewed and is accepted. The terminal disclaimer has been recorded.

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

Art Unit: 1626

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/17/03 has been entered.

**Claim Rejections - 35 U.S.C. § 103**

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

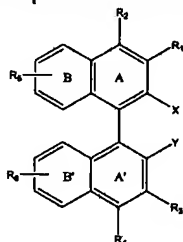
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claim 9 and dependent claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vyskocil et al., Synthesis of 2-Amino-2'-diphosphino-1,1'-binaphthyl (MAP) and its Accelerating Effect on the Pd(0)-Catalyzed N-Arylation,

Art Unit: 1626

Tetrahedron Letters 39 (1998) pp. 9289-9292 and Inanaga et al., U.S. Patent number 6,274,745 in combination.

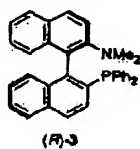
Applicants claim a ligand represented by structural formula (3), where the substituents



are as defined in claim 9.

#### **Determination of the scope and content of the prior art (MPEP §2141.01)**

Vyskocil et al., teach chiral ligand similar to the instantly claimed ligand. See the entire disclosure, especially pages 9289 and 9292 respectively. Note for example ligand



number 3.

Inanaga et al., disclose binaphthol monophosphate derivative useful as catalysts for asymmetric synthesis. See the entire publication especially column 2, formulae (I) and (2).

#### **Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)**

The difference between the instant claims and Vyskocil et al., resides in the definition of  $R^5$  and  $R^6$ . Applicants require substituent  $R^5$  and  $R^6$  to be among others alkyl, whereas Vyskocil et al., teach hydrogen. See ligand (3).

However, Inanaga et al., (U.S. Patent number 6,274,745), an analogous art teaches an optional methyl substitution on a similar binaphthol ring system. See column 2, formulae (I) and (2) wherein each of  $R_1$  and  $R_2$  is hydrogen or alkyl.

#### **Finding of prima facie obviousness---rational and motivation (MPEP §2142-2143)**

The claimed ligands would be obvious from the homologous compounds of Vyskocil et al., in the absence of any unobvious or unexpected properties especially since one of ordinary skill in the art would expect that compounds so closely related structurally would have the same or virtually the same properties. See In re Wood, 199 USPQ, 137-142. Thus, Inanaga et al., teaching an analogous art, provides the motivation to arrive at the instant compounds because the reference teaches the equivalency or the interchangeability of hydrogen or methyl.

Therefore one of ordinary skill in the art in possession of Vyskocil et al., and Inanaga et al., would expect compounds so closely related structurally would have similar properties. See Inanaga et al., column 11, lines 64-65 where 6,6-bis (2''6''-dimethylphenyl)-1,1'-binaphthyl-2,2'-diol is disclosed.

---

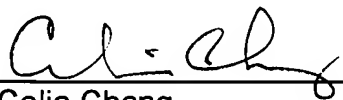
Claims 21-30, 32-77 and 79 have not been rejected over any prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to E. Sackey whose telephone number is (703) 305-6889. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane, can be reached on (703) 308-4537. The fax phone number for this Group is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1235.

EOS  
February 3, 2004

  
\_\_\_\_\_  
Celia Chang  
Primary Patent Examiner  
Group 1600  
Technology Center 1

Application/Control Number: 10/004,101

Art Unit: 1626

Page 6